



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/712,563   | 11/13/2003  | Joseph Phillip Bigus | ROC920020170US1     | 8807             |
| 30206  | 7590        | 05/15/2006           | EXAMINER            |                  |
| IBM CORPORATION<br>ROCHESTER IP LAW DEPT. 917<br>3605 HIGHWAY 52 NORTH<br>ROCHESTER, MN 55901-7829 |             |                      | ALLEN, NICOLE L     |                  |
|  |             |                      | ART UNIT            | PAPER NUMBER     |
|  |             |                      | 2129                |                  |

DATE MAILED: 05/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                      |                                     |  |
|------------------------------|--------------------------------------|-------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/712,563 | <b>Applicant(s)</b><br>BIGUS ET AL. |  |
|                              | <b>Examiner</b><br>Nicole L. Allen   | <b>Art Unit</b><br>2129             |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 13 November 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>11/13/2003</u> . | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. *The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:*

*A person shall be entitled to a patent unless –*

*(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.*

*Claims 1- 11, 13 -16, 18-29 are rejected under 35 U.S.C. 102(b) as being anticipated by Steven D. Kaehler ("Fuzzy Logic", Parts 1-6).*

*As per claims 1, 18, and 24 Kaehler teaches an apparatus, said apparatus comprising:*  
*a controller (a proportional temperature controller, page 2)*  
*a curve matching mechanism (Part 4, page 1 "Membership Function"; the examiner reads "Membership function as a curve matching mechanism because it defines the overlaps between inputs and output a response) that executes under the direction of said controller, said curve matching mechanism receiving curve data as an input (Part 4, Figure 6; Input has two conditions "error" and "error-dot"), said curve matching mechanism using Fuzzy Logic to describe said curve data and to thereby create curve data description information, said curve data description information (the examiner reads the output curve as "curve data description information) then being available to said controller (Part 3, page 2 Figure 1; looking at figure 1 it shows the output being distributed to the heater and cooler then to the "controlled" environment)*

*As per claims 2, 19 and 25, Kaehler teaches the apparatus of claim 1 wherein said controller is a Fuzzy Logic controller that executes on a processor (Part 1, page 2, the examiner reads that a*

*Fuzzy logic can be built into a large computerized process control system which can be a "processor").*

*As per claims 3, 8, 13, 20 and 26, Kaehler teaches the apparatus of claim 1 wherein said curve data is time series data (Fig. 2; the examiner reads the axis labeled "Time" as time series data).*

*As per claims 4, 9, 14, 21 and 27 Kaehler teaches the apparatus of claim 1 wherein said curve data is described by comparing said curve data to at least one standard curve, said at least one standard curve being a Fuzzy Set (Part 4, page 1, Define functional overlaps between inputs to determine their influence on the "fuzzy output sets". The examiner reads that the output set is a Fuzzy set.*

*As per claims 5, 10, 15, 22 and 28, Kaehler teaches the apparatus of claim 1 wherein said curve data description information is an output curve (Part 6, Figure 8; the examiner reads figure 8 as the out curve for the data).*

*As per claims 6, 11, 16, 23 and 29, Kaehler teaches the apparatus of claim 5 wherein said at least one output curve shows a degree of similarity between said curve data and said at least one standard curve (Part 4, Figure 7; the examiner reads the graph showing the degree of membership which is the similarity between inputs).*

*As per claim 7, Kaehler teaches an apparatus, said apparatus comprising: a Fuzzy Controller that executes on a processor (See rejection of claim 2 as set forth above), and a curve matching*

*mechanism that executes under the direction of said Fuzzy Controller, said curve matching mechanism receiving curve data as an input, said curve matching mechanism using Fuzzy Logic to describe said curve data and to thereby create curve data description information, said curve data description information then being available to said Fuzzy Controller, said Fuzzy Controller then using said curve description information to at least partially control said apparatus (See rejection of claim 1 as set forth above).*

**Claim Rejections - 35 USC § 103**

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

*(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.*

*12 + 17 are*  
Claim ~~12~~ is rejected under 35 U.S.C. 103(a) as being unpatentable over Kaehler as applied to claim 1 above, and further in view of Kamihira (US Patent No. 6,278,986)

*As per claim 12, Kaehler teaches the method of a Fuzzy Controller that executes on a processor and a curve matching mechanism that executes under the direction of said Fuzzy Controller, said curve matching mechanism receiving curve data as an input, said curve matching mechanism using Fuzzy Logic to describe said curve data and to thereby create curve data description information, said curve data description information then being available to said Fuzzy Controller, said Fuzzy Controller then using said curve description information to at least partially control said apparatus as set above in claim 7.*

*Kaehler does not disclose expressly an engine*

*Kamihira et al. discloses a automobile engine (Col. 20, Lines 31-33, Fig. 3)*

*Kaehler and Kamihira are analogous art because they both deal with fuzzy logic on a large computerized process control system.*

*At the time of the invention it would have been obvious to a person of ordinary skill in the art to incorporate the fuzzy logic on an automobile engine.*

*Motivation for doing so would have been to be able to analyze measurements and to make adjustments to the engine's behavior.*

*Therefore, it would have been obvious to combine Kamihira with Kaehler for the benefit of having a fuzzy controller and an automobile engine that uses fuzzy logic to create curve data description information to obtain the invention as specified in claim 12.*

*As per claim 17, Kamihira teaches the apparatus of claim 12 in view of Kaehler as set forth above wherein said engine is contained within a vehicle (Kamihira teaches the engine being an automobile engine Col. 20, Lines 31-33, Fig. 3)*

Application/Control Number:  
10/712,563  
Art Unit: 2129

Page 6

*Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nicole L. Allen whose telephone number is (571) 272-5830. The examiner can normally be reached on Monday-Friday 7:00-3:30.*

*If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Vincent can be reached on (571) 272-3080. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.*

*Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).*

  
David Vincent  
Supervisory Patent Examiner

NLA